

B<sup>3</sup>  
-- 48. (New) A composition of matter comprising:

- (a) a transparent non-porous or translucent non-porous system capable of retaining or containing a fluid or solution, which system comprises:
  - (i) a solid support;
  - (ii) a double-stranded oligonucleotide or polynucleotide which is directly or indirectly fixed or immobilized to said solid support wherein one of the strands comprises a chemical label or labels which comprise a signalling moiety or moieties which are capable of generating a soluble signal; and
- (b) fluid or solution. --

-- 49. (New) The composition according to claim 48, wherein said solid support is contained within the transparent non-porous or translucent non-porous system. --

-- 50. (New) The composition according to claim 48, wherein said solid support is porous or non-porous. --

-- 51. (New) The composition according to claim 50, wherein said porous solid support comprises a porous polymeric material. --

-- 52. (New) The composition according to claim 51, wherein said porous polymeric material is selected from the group consisting of dextran, cellulose and nitrocellulose. --

-- 53. (New) The composition according to claim 50, wherein said non-porous solid support is selected from the group consisting of siliceous matter and non-porous polymeric material. --

-- 54. (New) The composition according to claim 53, wherein said siliceous matter comprises glass or a glass-coated surface. --

B3  
Bcont  
Sub  
C27

-- 55. (New) The composition according to claim 53, wherein said non-porous polymeric material is selected from the group consisting of polyethylene, polypropylene, polystyrene and epoxy. --

-- 56. (New) The composition according to claim 48, wherein said system is selected from the group consisting of a well, a tube, a cuvette and an apparatus that comprises a plurality of said wells, tubes or cuvettes. --

-- 57. (New) The composition according to claim 56, wherein said well comprises a microtiter well. --

-- 58. (New) The composition according to claim 56, wherein said wells in the apparatus comprise microtiter wells. --

-- 59. (New) The composition according to claim 48, wherein said solid support and said system are composed of the same materials. --

-- 60. (New) The composition according to claim 48, wherein said solid support and said system are composed of different materials. --

-- 61. (New) The composition according to claim 48, wherein one of said oligonucleotide or polynucleotide strands is directly or indirectly fixed or immobilized to the solid support. --

-- 62. (New) The composition according to claim 61, wherein said oligonucleotide or polynucleotide strand is indirectly fixed or immobilized to the solid support by sandwich hybridization. --

Sub  
C3

-- 63. (New) The composition according to claim 48 wherein said double-stranded oligonucleotide or polynucleotide is selected from the group consisting of DNA, RNA, a DNA-RNA hybrid and a DNA-RNA chimera. --

ENZ-7(P)(C3)

B3  
cont

-- 64. (New) The composition according to claim 48, wherein said label or labels are the signalling moiety or moieties. --

-- 65. (New) The composition according to claims 48 or 64, wherein said label or labels are directly attached to the oligonucleotide or polynucleotide. --

-- 66. (New) The composition according to claims 48 or 64, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide. --

-- 67. (New) The composition according to claim 66, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide through the formation of a complex. --

-- 68. (New) The composition according to claim 67, wherein said complex is selected from the group consisting of biotin and avidin, biotin and streptavidin, a sugar and a lectin, and an antigen and an antibody. --

-- 69. (New) The composition according to claim 66, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide through a bridging moiety. --

-- 70. (New) The composition according to claim 48, wherein the signalling moiety or moieties of said label or labels are directly or indirectly attached thereto. --

-- 71. (New) The composition according to claim 48, wherein said signalling moiety or moieties are selected from the group consisting of an enzyme, a co-enzyme, a chelating agent, a chromagen, a fluorescent agent and a chemiluminescent agent. --

-- 72. (New) The composition according to claim 48, wherein said soluble signal is generatable from a chromagen, or by fluorescence or chemiluminescence. --

B3  
Cmt

-- 73. (New) The composition according to claim 72, wherein said soluble signal is indirectly generatable by an enzyme or enzymatic reaction. --

-- 74. (New) The composition according to claim 48, wherein said soluble signal is detectable by a technique selected from the group consisting of photometric techniques and colorimetric techniques. --

-- 75. (New) The composition according to claim 74, wherein said photometric techniques comprise spectrophotometric techniques. --

-- 76. (New) The composition according to claim 48, wherein said soluble signal is selected from the group consisting of a colored product, a chemiluminescent product and a fluorescent product. --

Sub  
C4

-- 77. (New) A composition of matter comprising:

(a) a transparent non-porous or translucent non-porous system capable of retaining or containing a fluid or solution, which system comprises:

a double-stranded oligonucleotide or polynucleotide which is directly or indirectly fixed or immobilized to said system wherein one of the strands comprises a chemical label or labels which comprise a signalling moiety or moieties which are capable of generating a soluble signal; and

(b) fluid or solution. --

-- 78. (New) The composition according to claim 77, wherein said non-porous system is selected from the group consisting of siliceous matter and non-porous polymeric material. --

-- 79. (New) The composition according to claim 78, wherein said siliceous matter comprises glass or a glass-coated surface. --

ENZ-7(P)(C3)

B3  
cont

Sub  
C57

-- 80. (New) The composition according to claim 78, wherein said non-porous polymeric material is selected from the group consisting of polyethylene, polypropylene, polystyrene and epoxy. --

-- 81. (New) The composition according to claim 77, wherein said system is selected from the group consisting of a well, a tube, a cuvette and an apparatus that comprises a plurality of said wells, tubes or cuvettes. --

-- 82. (New) The composition according to claim 81, wherein said well comprises a microtiter well. --

-- 83. (New) The compositions according to claim 81, wherein said wells in the apparatus comprise microtiter wells. --

-- 84. (New) The composition according to claim 77, wherein one of said oligonucleotide or polynucleotide strands is directly or indirectly fixed or immobilized to said system. --

-- 85. (New) The composition according to claim 84, wherein said oligonucleotide or polynucleotide strand is indirectly fixed or immobilized to the system by sandwich hybridization. --

Sub  
C67

-- 86. (New) The composition according to claim 48 wherein said double-stranded oligonucleotide or polynucleotide is selected from the group consisting of DNA, RNA, a DNA-RNA hybrid and a DNA-RNA chimera. --

-- 87. (New) The composition according to claim 77, wherein said label or labels are the signalling moiety or moieties. --

B3  
cont

-- 88. (New) The composition according to claims 77 or 87, wherein said label or labels are directly attached to the oligonucleotide or polynucleotide. --

-- 89. (New) The composition according to claims 77 or 87, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide. --

-- 90. (New) The composition according to claim 89, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide through the formation of a complex. --

-- 91. (New) The composition according to claim 90, wherein said complex is selected from the group consisting of biotin and avidin, biotin and streptavidin, a sugar and a lectin, and an antigen and an antibody. --

-- 92. (New) The composition according to claim 89, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide through a bridging moiety. --

-- 93. (New) The composition according to claim 77, wherein the signalling moiety or moieties of said label or labels are directly or indirectly attached thereto. --

-- 94. (New) The composition according to claim 77, wherein said signalling moiety or moieties are selected from the group consisting of an enzyme, a co-enzyme, a chelating agent, a chromagen, a fluorescent agent and a chemiluminescent agent. --

-- 95. (New) The composition according to claim 77, wherein said soluble signal is generatable from a chromagen, or by fluorescence or chemiluminescence. --

B3  
CMT

-- 96. (New) The composition according to claim 95, wherein said soluble signal is indirectly generatable by an enzyme or enzymatic reaction. --

-- 97. (New) The composition according to claim 77, wherein said soluble signal is detectable by a technique selected from the group consisting of photometric techniques and colorimetric techniques. --

-- 98. (New) The composition according to claim 97, wherein said photometric techniques comprise spectrophotometric techniques. --

-- 99. (New) The composition according to claim 77, wherein said soluble signal is selected from the group consisting of a colored product, a chemiluminescent and a fluorescent product. --

Sub  
C77

-- 100. (New) An apparatus comprising:

1) one or more solution containing means, each comprising a transparent non-porous or translucent non-porous device;

2) means for forming a fixed or immobilized double-stranded oligonucleotide or polynucleotide hybrid to a solid support in said device, said hybrid comprising a chemical label or labels attached to one strand of said hybrid, said label or labels comprising a signalling moiety or moieties which are capable of generating a soluble signal; and

3) soluble signal generating means. --

B3  
CONT

-- 101. (New) A kit for generating a soluble signal from a chemically labeled double-stranded oligonucleotide or polynucleotide, comprising in one or more containers:

- (i) a first single-stranded oligonucleotide or polynucleotide strand containing a sequence having attached thereto a chemical label or labels which further comprise a signalling moiety or moieties which are capable of generating a soluble signal, said sequence being partially homologous or hybridizable to a sequence contained in a nucleic acid of interest, and said strand being directly or indirectly fixed or immobilized to a solid support;
- (ii) a second single-stranded oligonucleotide or polynucleotide containing a sequence which is homologous to a sequence contained in said sample nucleic acid different from said first sequence in (i);
- (iii) a solution for generating a soluble signal; and
- (iv) buffers and instructions therefor. --

Sub  
C87

-- 102. (New) A transparent non-porous or translucent non-porous system capable of retaining or containing a fluid or solution which comprises:

- (i) an oligonucleotide or polynucleotide capable of hybridizing to an oligo- or polynucleotide sequence, said oligonucleotide or polynucleotide comprising a label or labels which comprise a signalling moiety or moieties which are capable of generating a soluble signal;
- (ii) a solid support capable of directly or indirectly fixing or immobilizing said oligo- or polynucleotide sequence or said oligonucleotide or polynucleotide (i); and
- (iii) fluid or solution. --

-- 103. (New) The system according to claim 102, wherein said solid support is contained within said transparent non-porous or translucent non-porous system. --

-- 104. (New) The system according to claim 102, wherein the solid support is porous or non-porous. --

-- 105. (New) The system according to claim 104, wherein said porous solid support comprises a porous polymeric material. --



B<sup>3</sup>  
cont

-- 106. (New) The system according to claim 105, wherein said porous polymeric material is selected from the group consisting of dextran, cellulose and nitrocellulose. --

-- 107. (New) The system according to claim 104, wherein said non-porous solid support is selected from the group consisting of siliceous material and non-porous polymeric material. --

-- 108. (New) The system according to claim 107, wherein said siliceous material comprises glass or a glass-coated surface. --

Sub  
C9 7  
-- 109. (New) The system according to claim 107, wherein said non-porous polymeric material is selected from the group consisting of polyethylene, polypropylene, polystyrene and epoxy. --

-- 110. (New) The system according to claim 102, wherein said system is selected from the group consisting of a well, a tube, a cuvette and an apparatus that comprises a plurality of wells or microtitre wells, tubes or cuvettes. --

-- 111. (New) The system according to claim 110, wherein said well comprises a microtiter well. --

-- 112. (New) The system according to claim 110, wherein said wells in the apparatus comprise microtiter wells. --

-- 113. (New) The system according to claim 102, wherein said solid support and said system are composed of the same materials. --

-- 114. (New) The system according to claim 102, wherein said solid support and said system are composed of different materials. --

B3  
cont

-- 115. (New) The system according to claim 102, wherein said solid support is capable of indirectly fixing or immobilizing the oligo- or polynucleotide sequence or said oligonucleotide or polynucleotide (i). --

-- 116. (New) The system according to claim 115, wherein said oligo- or polynucleotide sequence or said oligonucleotide or polynucleotide is indirectly fixed or immobilized to the solid support through the hybridization of a complementary oligo- or polynucleotide sequence. --

-- 117. (New) The system according to claim 102, wherein said solid support is capable of indirectly fixing or immobilizing the oligonucleotide or polynucleotide. --

Sub  
C10 7 -- 118. (New) The system according to claim 102, wherein said oligonucleotide or polynucleotide (i) or said oligo- or polynucleotide is selected from the group consisting of DNA, RNA, a DNA-RNA hybrid and a DNA-RNA chimera. --

-- 119. (New) The system according to claim 102, wherein said label or labels are the signalling moiety. --

-- 120. (New) The system according to claims 102 or 119, wherein said label or labels are directly attached to the oligonucleotide or polynucleotide. --

-- 121. (New) The system according to claims 102 or 119, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide. --

-- 122. (New) The system according to claim 121, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide through the formation of a complex. --

B3  
cm4

- 123. (New) The system according to claim 122, wherein said complex is selected from the group consisting of biotin and avidin, biotin and streptavidin, a sugar and a lectin, and an antigen and an antibody. --
- 124. (New) The system according to claim 121, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide through a bridging moiety. --
- 125. (New) The system according to claim 102, wherein the signalling moiety or moieties of said label or labels are directly or indirectly attached thereto. --
- 126. (New) The system according to claim 102, wherein said signalling moiety or moieties are selected from the group consisting of an enzyme, a co-enzyme, a chelating agent, a chromagen, a fluorescent agent and a chemiluminescent agent. --
- 127. (New) The system according to claim 102, wherein said soluble signal is generatable from a chromagen, or by fluorescence or chemiluminescence. --
- 128. (New) The system according to claim 102, wherein said soluble signal is indirectly generatable by an enzyme or enzymatic reaction. --
- 129. (New) The system according to claim 102, wherein said soluble signal is detectable by a technique selected from the group consisting of photometric techniques and colorimetric techniques. --
- 130. (New) The system according to claim 129, wherein said photometric techniques comprise spectrophotometric techniques. --
- 131. (New) The system according to claim 102, wherein said soluble signal is selected from the group consisting of a colored product, a chemiluminescent product and a fluorescent product. --

B3  
CMT

-- 132. (New) An apparatus comprising:

Sub  
C11

- 1) means for retaining or containing a fluid or solution;
- 2) one or more transparent non-porous or translucent non-porous devices, each comprising a solid support;
- 3) means for forming a fixed or immobilized oligonucleotide or polynucleotide hybrid to said solid support, said hybrid comprising a label or labels attached to said hybrid, said label or labels further comprising a signalling moiety or moieties capable of generating a soluble signal;
- 4) means for detecting a soluble signal; and
- 5) fluid or solution. --

---

In the Abstract of the Disclosure

Delete the previous abstract and substitute therefor the new abstract  
(page 31) attached hereto as Exhibit 1.

B4

\* \* \* \* \*